More Symmetry

Learning Goal
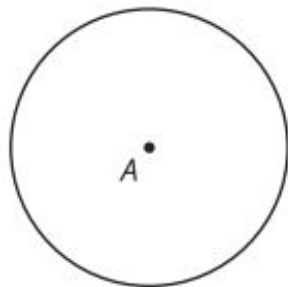

- I can describe the rotations that take a figure onto itself.
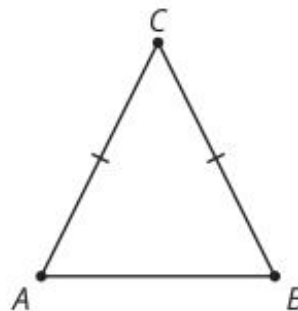
16.1 Symmetry

Which one doesn't belong?
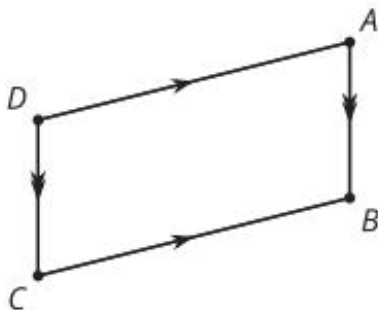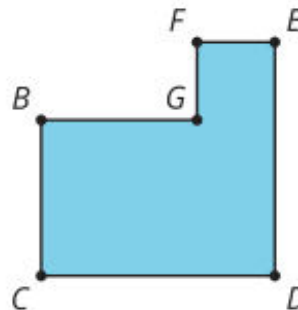
16.2 Self Rotation

Determine all the angles of rotation that create symmetry for the shape your teacher assigns you. Create a visual display about your shape. Include these parts in your display:

- the name of your shape

- the definition of your shape

- drawings of each rotation that creates symmetry

- a description in words of each rotation that creates symmetry, including the center, angle, and direction of rotation

- one non-example (a description and drawing of a rotation that does not result in symmetry)

Work with your partner to complete your poster.

Activity Synthesis

- Which shapes had the fewest angles of rotation that created symmetry? Which had the most?

- What do you notice about the order of the shapes in terms of reflection symmetry versus the order of the shapes in terms of rotation symmetry?

- Are there any angles of rotation creating symmetry that the group missed?

- Are there any angles of rotation that don't create symmetry for all shapes of the given type?

Activity Synthesis

- Which shapes had the fewest lines of symmetry? Which had the most?

- Were there any lines that you thought would be lines of symmetry, but when you tried to reflect, they turned out not to be?

- Describe a shape that would have no lines of symmetry

16.3 Parallelogram Symmetry

Clare says, "Last class I thought the parallelogram would have reflection symmetry. I tried using a diagonal as the line of symmetry but it didn't work. So now I'm doubting that it has rotation symmetry."

Lin says, "I thought that too at first, but now I think that a parallelogram does have rotation symmetry. Here, look at this."

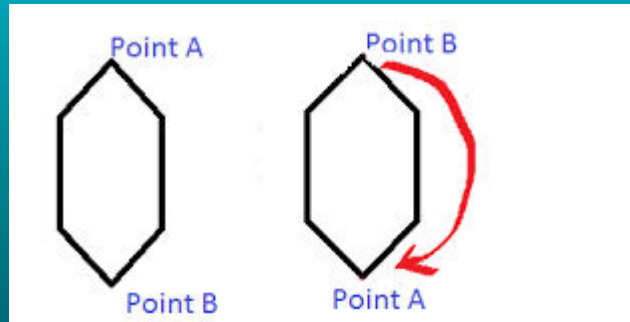How could Lin describe to Clare the symmetry she sees?
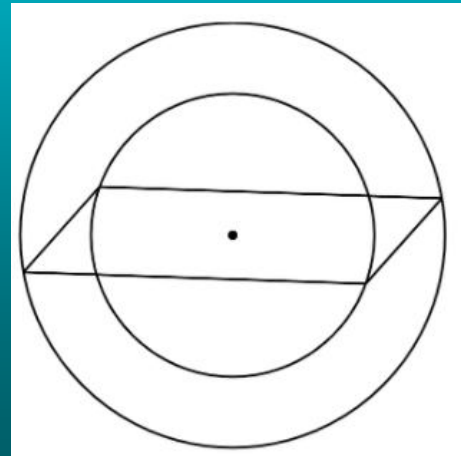
Activity Synthesis

Share your responses

Lesson Synthesis

When does a rotation show a figure has rotation symmetry?

Sketch shapes for which the following angles of rotation create symmetry and write a transformation statement for each one. Look at the sentence frame in the definition of rotation in your reference chart if you get stuck.

- 180 degrees
- 90 degrees
- 45 degrees